REMARKS

The Final Office Action mailed December 14, 2006, has been received and reviewed. Claims 1 through 25 and 40 are currently pending in the application, of which claims 1 through 3, 7 through 10, 13, 20 through 25 and 40 are currently under examination. Claims 4 through 6, 11, 12, and 14 through 19 are withdrawn from consideration as being drawn to a non-elected invention. Applicants respectfully request reconsideration of the application in view of the arguments set forth herein below.

35 U.S.C. § 102(b) Anticipation Rejections

Applicants note that two separate anticipation rejections based on Slysh (U.S. Patent No. 4,337,560) are set forth in the body of the Final Action. One rejection is set forth on page 2 wherein claims 1 through 3, 8, 9, 13, 21 and 25 are rejected as being anticipated by Slysh. A second rejection is set forth on page 3 wherein claims 1, 8 and 10 are rejected as being anticipated by Slysh. For sake of clarity and consistency, both rejections are discussed in the order set forth in the Final Action.

Anticipation Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 1 through 3, 8, 9, 13, 21, 25 and 40 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 1 through 3, 8, 9, 13, 21 and 25

Independent claim 1 of the presently claimed invention is directed to a deployable truss. The deployable truss comprises: a plurality of column members connected at their ends to form a

deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, wherein at least some of the plurality of column members comprise column assemblies including a plurality of strut members, *each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly.*

The Examiner cites Slysh as showing a deployable truss comprising: "a plurality of column members (figure 14) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, at least some of the plurality of column members comprise column assemblies including a plurality of strut members (figure 14 the top and bottom parts 21), each strut member of an associated column assembly being connected to each other of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (see figure 14)." (Office Action, page 2).

Applicants respectfully disagree with the Examiner's characterization of Slysh with regards to FIG. 14. Particularly, Applicants submit that FIG. 14 does not represent a plurality of column members as stated by the Examiner. The description of FIG. 14 states that it is "a perspective view of a fixed geometry strut having a hat cross section." (See Col. 3, lines 27-28). Furthermore, Applicants submit that Slysh does not describe "top and bottom parts 21" as stated by the Examiner, implying that such "top and bottom parts" are individual struts. Instead, Slysh describes element 21 as a single strut structure. More specifically, Slysh states that part 21 is "a fixed geometry strut" of a "generally hat-shaped cross-section" which "tapers towards each end from a maximum cross section at strut mid point." (See Col. 6, lines 29-32). Applicants find no description by Slysh, nor has the Examiner pointed to any specific description therein, stating that the component shown in FIG. 14 includes a plurality of struts arranged in the manner recited by claim 1 of the present invention . Thus, Applicants submit that Slysh fails to expressly or inherently describe "column assemblies including a *plurality* of strut members...*connected to each other*...at a first end of the column assembly *and* at a second end of the column assembly," as recited in claim 1.

As Slysh does not describe "column assemblies including a *plurality* of strut members...*connected to each other*...at a first end of the column assembly *and* at a second end of the column assembly," as recited in independent claim 1, Applicants assert that claim 1 is not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 2, 3, 8, 9, 13, 21 and 25 is allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that claims 2, 3, 8, 9, 13, 21 and 25 are not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of dependent claims 2, 3, 8, 9, 13, 21 and 25 under 35 U.S.C. § 102(b).

Claim 40

Independent claim 40 is also directed to a deployable truss. The deployable truss comprising: a plurality of contiguously attached deployable bays forming a rigid space truss when in a deployed state and having a stowage volume substantially less than their deployed volume when in a collapsed state, each bay comprising a plurality of column members, wherein at least some of the plurality of column members comprise column assemblies having a centerline; and wherein each column assembly comprises *a plurality of strut members*, each strut member being *connected to each other strut member at a first end of the column assembly and at a second end of the column assembly*, the plurality of strut members being substantially symmetrically arranged about the centerline of the column assembly.

The Examiner states that "Slysh (figures 4, 140) shows a deployable truss comprising a plurality of contiguously attached deployable bays forming a rigid space truss when in a deployed state and having a stowage volume substantially less than their deployed volume when in a collapsed state, each bay comprising a plurality of column members (figure 14), at least some of the plurality of column members comprising column assemblies having a centerline, each column assembly comprising a plurality of struts (figure 14, parts 21 top and bottom), each strut member being connected to each other strut member at a first end of the column assembly and at

a second end of the column assembly, the plurality of strut members being substantially symmetrically arranged about the centerline of the column assembly." (Office Action page 3).

Applicant once again notes that Slysh does not describe a plurality of struts configured in the manner set forth in claim 40. Instead, Slysh describes part 21 as a single strut structure. Slysh states that part 21 is "a fixed geometry strut" of a "generally hat-shaped cross-section" which "tapers towards each end from a maximum cross section at strut mid point." (See Col. 6, lines 29-32). Applicants find no description by Slysh, nor has the Examiner pointed to any specific description therein, stating that the component shown in FIG. 14 includes a plurality of struts arranged in the manner recited by claim 40 of the present invention. Thus, Slysh fails to expressly or inherently describe column assemblies wherein "each column assembly comprises a *plurality* of strut members...*connected to each other*...at a first end of the column assembly *and* at a second end of the column assembly," as recited in claim 40.

As Slysh does not describe column assemblies comprising "a plurality of strut members, each strut member being connected to each other strut member at a first end of the column assembly and at a second end of the column assembly," as recited in independent claim 40, Applicants assert that claim 40 is not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of independent claim 40 under 35 U.S.C. § 102(b).

Anticipation Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 1, 8 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

As stated above, Claim 1 recites, in part, "each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*."

The Examiner once again cites Slysh as showing a deployable trust. In this part of the Office Action, the Examiner states that "Slysh (figures 5, 1-9) shows a deployable truss comprising a plurality of column members (figure 5) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its

deployed volume in a collapsed state, at least some of the plurality of column members comprising column assemblies including a plurality of strut members (figure 9 shows the struts separated by the hinge and the other border at 16), each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (see figure 7)." (Office Action pages 3-4).

The Examiner gives no explanation or showing, more than "see figure 7," as to how Slysh describes "each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly," as recited in claim 1. (See Office Action page 4). FIG. 7 shows the strut illustrated in FIG. 6 in a compressed state. (See Col 3, line 8). The strut 12 of FIGS. 6 and 7 is formed of two conical shells joined together at their bases. (See Col. 5, lines 29-32). These two shells are not joined together at any other location. Thus, there is no connection to each other "at a first end of the column assembly *and* at a second end of the column assembly," as recited in claim 1.

The Examiner relies on FIG. 9 of Slysh in an effort to show a plurality of strut members. FIG. 9 illustrates sides 14 and 15 of strut 12 being attached together with a longitudinal hinge 16. (See Col. 5, lines 34-36). Applicants note, however, that FIG. 9, and its related description does not describe the connection of a *plurality* of strut members at "a first end of *the column assembly* and at a second end of *the column assembly*." As stated above, Slysh describes the component of FIG. 6 as a single strut 12 consisting of two conical shells joined together at their bases, each shell includes sides 14 and 15 hingedly coupled to one another. (Col. 5, lines 29-32, 34-36).

While one might argue that the component in FIG. 6 includes two conical struts coupled at their respective bases, such a construction still fails to anticipate claim 1 of the presently claimed invention since the two conical portions are not connected to each other at their "second ends."

Furthermore, if one were to consider each half of the conical member as being a "strut" (which, Applicants submit is contrary to Slysh's own description), such an interpretation would still fail to meet all of the limitations of claim 1 since the four members are not connected to each

other member at a first end of the column assembly *and* connected to each other member at a second end of the column assembly. Thus, Applicants submit that Slysh clearly fails to describe "*each strut member* of an associated column assembly being connected to *each other strut member*," as recited in claim 1.

As Slysh does not describe "*each strut member* of an associated column assembly being connected to *each other strut member* of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*," as recited in independent claim 1, Applicants assert that claim 1 is not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 8 and 10 is allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that claims 8 and 10 are not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of dependent claims 8 and 10 under 35 U.S.C. § 102(b).

Anticipation Rejection Based on U.S. Patent No. 4,557,083 to Zanardo

Claims 1, 3, 7 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zanardo (U.S. Patent No. 4,557,083). Applicants respectfully traverse this rejection, as hereinafter set forth.

Claim 1 recites, in part, "each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*."

The Examiner cites Zanardo as showing "a deployable truss comprising a plurality of column members (figure 1 shows a column member made up of two struts 8) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, at least some of the plurality of column members comprising column assemblies including a plurality of strut members (each column having two struts), each strut member of an associated column assembly being connected to each other of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (through part 13)." (Office Action page 4).

Zanardo describes an extensible arm in which rods 8 are connected together in their respective centers by rotary couplings. The Examiner relies on FIG. 1 to show that the rods 8 are connected to each other through parts 13. However, Applicants disagree with the Examiner's characterization of Zanardo with respect to FIG. 1. Considering both FIGS. 1 and 2, rods 4 are configured to constitute diagonals 13. (See Col. 2, lines 60-63). FIG. 2 illustrates that the pair of rods 8 (cited by the Examiner as being a plurality of struts) are only connected to rods 4 at a single end of each column assembly. Nowhere do the pair of rods 8 appear to be connected to the same rod 4. Nor do the rods 8 appear to be coupled to each other at both first ends and second ends of a given column assembly. Thus, Zanardo fails to expressly or inherently describe "each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*."

As Zanardo does not describe "each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*," Applicants assert that claim 1 is not anticipated by Zanardo and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 3, 7 and 20 is allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that claims 3, 7 and 20 are not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of dependent claims 3, 7 and 20 under 35 U.S.C. § 102(b).

Regarding dependent claim 7, Applicant additionally asserts that Zanardo does not describe "at least some of the strut members of the column assembly exhibit a substantially *helical twist about a longitudinal centerline* of the column assembly," as recited in dependent claim 7.

The Examiner cites Zanardo as disclosing "at least some of the strut members of the column assembly exhibit a substantially helical twist about a longitudinal centerline of the column assembly (the strut members forming helical twists around each other). (Office Action page 5)

Zanardo discloses rods 8 being articulated together in pairs centrally about articulation axes 9. However, Zanardo does not describe rods 8 as exhibiting a helix. Furthermore, the articulation

axes 9 are located perpendicular to longitudinal struts 12. Applicants submit that such a description does not result in at least some strut members of a plurality exhibiting a substantially helical twist about *a longitudinal centerline of a column assembly.*

Additionally, Applicants note that the Examiner merely asserts that Zanardo describes such subject matter and that the Examiner has not provided any support in the way of specific citation of such description by Zanardo. Thus, Applicants submit that Zanardo fails to expressly or inherently describe at least some strut members configured as recited in claim 1 which also exhibit "*a substantially helical twist about a longitudinal centerline* of the column assembly."

Therefore, Applicant respectfully requests that the Examiner withdraw the rejection of dependent claim 7 under 35 U.S.C. § 102(b) for this additional reason.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 22 through 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

> M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:
>
> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

An obviousness rejection for a dependent claim is proper only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Claims 22 through 24 each depend from independent claim 1. As discussed above, Slysh fails to teach or suggest all of the limitations recited in claim 1. Specifically, Slysh fails to teach or suggest "wherein at least some of the plurality of column

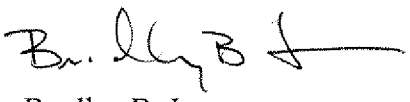
members comprise column assemblies including *a plurality of strut members*, each strut member of an associated column assembly *being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly*," as recited in independent claim 1. Therefore, Applicants assert that claim 1 would not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Slysh.

The nonobviousness of independent claim 1 precludes a rejection of claims 22 through 24, which depend therefrom, because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 22 through 24.

CONCLUSION

Claims 1 through 25 and 40 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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Date: March 14, 2007
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